

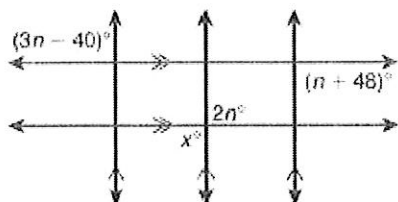
# Geometry Chapter 12 Practice Test

## Multiple Choice

Identify the choice that best completes the statement or answers the question.

B

- 1 What is the value of  $x$ ?



- A 80  
B 88

- C 92  
D 96

$$n + 48 = 3n - 40$$

$$88 = 2n$$

$$n = 44$$

$$x = 2n$$

$$x = 2(44) = 88$$

C

- 2 One exterior angle of a regular polygon measures  $24^\circ$ . What is the sum of the measures of the interior angles of the polygon?

- A  $360^\circ$   
B  $990^\circ$

- C  $2340^\circ$   
D  $3744^\circ$

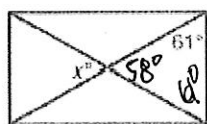
$$\frac{360}{24} = 15$$

$$15(180)$$



B

- 3 The figure is a rectangle. What is  $x$ ?

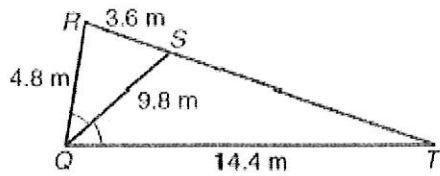


- A 29  
B 58

- C 61  
D 90

D

- 4 What is
- $ST$
- ?



- A 3.6 m  
B 7.2 m

$$\frac{ST}{3.6} = \frac{14.4}{9.8}$$

$$4.8(ST) = 51.84$$

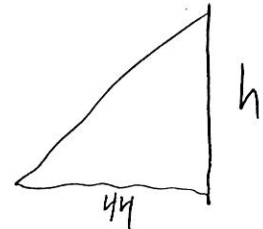
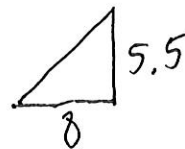
$$ST =$$

- C 9.8 m  
D 10.8 m

A

- 5 A 5 foot 6 inch boy casts an 8-foot shadow at the same time a nearby building casts a 44-foot shadow. To the nearest foot, what is the height of the building?

- A 30 ft  
B 64 ft  
C 1000 ft  
D 1946 ft



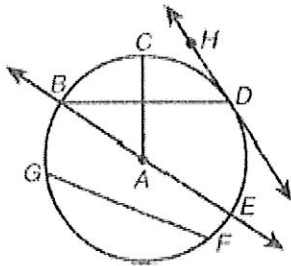
$$\frac{h}{44} = \frac{5.5}{8}$$

$$\frac{8h}{8} = \frac{242}{8}$$

$$h = 30.25$$

## Short Answer

- 1 Classify the lines and segments that intersect  $\odot A$ .



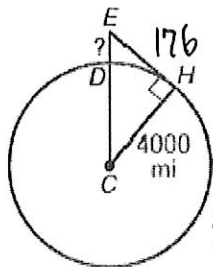
$\overleftrightarrow{HD}$ : tangent  
secant:  $\overleftrightarrow{BE}$

Chord:  $\overline{BE}$ ,  $\overline{BD}$ ,  $\overline{GF}$

Radius:  $\overline{AC}$ ,  $\overline{BA}$ ,  $\overline{AE}$

Diameter:  $\overline{BE}$

- 2 Mount McKinley in Alaska is North America's highest mountain. The distance from the summit to the horizon is about 176 miles. To the nearest tenth of a mile, find the height of the mountain.



3.9 miles.

$$4000^2 = h^2 + 176^2$$

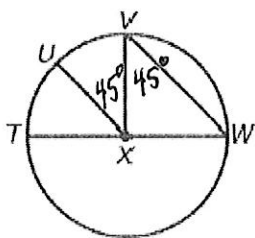
$$h = \sqrt{4000^2 - 176^2}$$

$$4000^2 + 176^2 = h^2$$

$$h = 4003.87$$

$$ED = 4003.87 - 4000$$

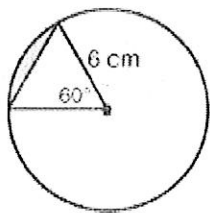
- 3 Given  $m\angle WVX = 45^\circ$  and  $\overline{VW} \parallel \overline{UX}$ , find  $m\widehat{UV}$ .



45°

- 4 Write True or False. Chords equally distant from the center of a circle are congruent.

- 5 Find the area of the segment of the circle to the nearest hundredth.



3.26 cm<sup>2</sup>

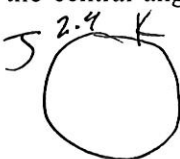
$$\text{Sector Area} = \frac{1}{6} \pi \cdot 6^2 = 6\pi$$

$$\Delta \text{ Area} = \frac{\sqrt{3}}{4} \cdot 6^2 = 9\sqrt{3}$$

$$\text{Segment: } 6\pi - 9\sqrt{3} =$$

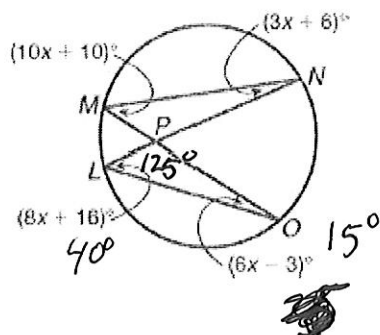
- 6 To the nearest degree, find the measure of the central angle for  $\widehat{JK}$  if the length of  $\widehat{JK}$  is 2.4 units and the radius is 6 units.

23°



$$2.4 = \frac{m}{360} \cdot 12\pi$$

- 7 Find  $m\angle LPO$ .



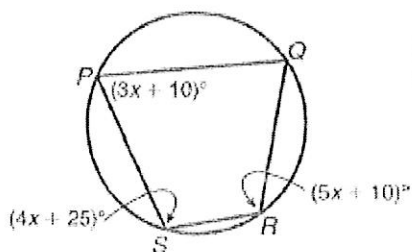
125°

$$3x + 6 = 6x - 3$$

$$9 = 3x$$

$$x = 3$$

- 8 Find  $m\angle RSP$ .



105°

$$(5x + 10) + (3x + 10) = 180^\circ$$

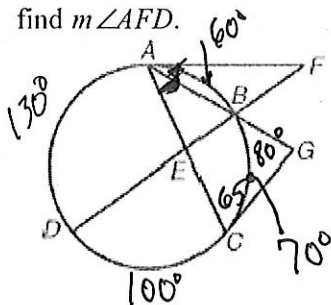
$$8x + 20 = 180^\circ$$

$$8x = 160$$

$$x = 20$$

$$m\angle RSP = 4(20) + 25 = 105^\circ$$

- 9 If  $m\angle ACG = 65^\circ$ ,  $m\angle AGC = 80^\circ$ ,  $m\widehat{DC} = 100^\circ$ ,  $m\widehat{BC} = 70^\circ$ , and  $\overline{FA}$  and  $\overline{GC}$  are tangent to the circle, find  $m\angle AFD$ .



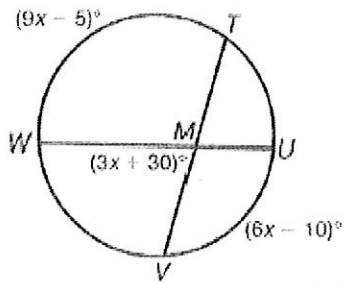
35°

$$m\angle AFD = \frac{130^\circ - 60^\circ}{2} = \frac{70^\circ}{2} = 35^\circ$$

Name: \_\_\_\_\_

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- 10 Find  $m\angle TMU$ .



75°

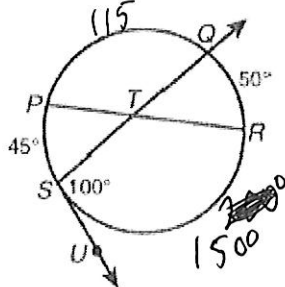
$$m\angle WMV = 3(15) + 30 = 75^\circ$$

$$m\angle TMW = \frac{(9x-5) + (6x-10)}{2}$$

$$\frac{15x-15}{2} = 7.5x-7.5$$

$$\begin{aligned} (3x+30) + (7.5x-7.5) &= 180 \\ 10.5x + 22.5 &= 180 \\ 10.5x &= 157.5 \\ x &= 15 \end{aligned}$$

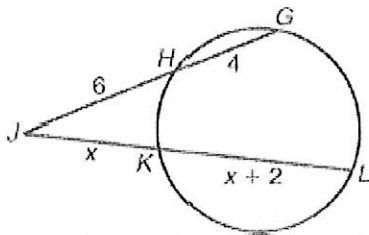
- 11 Find  $m\widehat{SPQ}$ .



160°

115 + 45

- 12 Find the length of  $\overline{KL}$ .



7

$$6(6+4) = x(x+(x+2))$$

$$60 = x(2x+2)$$

$$60 = 2x^2 + 2x$$

$$2x^2 + 2x - 60 = 0$$

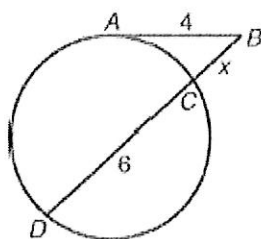
$$2(x^2 + x - 30) = 0$$

$$2(x+6)(x-5) = 0$$

$$x = -6 \text{ or } x = 5$$

$$KL = x+2 = 5+2$$

- 13 Find the length of
- $\overline{BD}$
- .



$$BD = x + 6$$

$$2 + 6$$

$$4^2 = x(x+6)$$

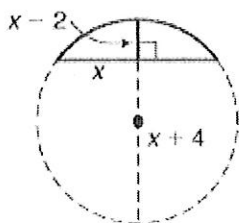
$$16 = x^2 + 6x$$

$$x^2 + 6x - 16 = 0$$

$$(x+8)(x-2) = 0$$

$$x = -8 \text{ or } x = 2$$

- 14 Find the diameter.



10

$$x^2 = (x-2)(x+4)$$

$$x^2 = x^2 + 2x - 8 \quad D = (x-2) + (x+4)$$

$$0 = 2x - 8$$

$$2x = 8$$

$$x = 4$$

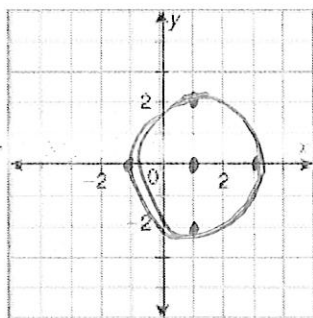
$$2x + 2$$

$$2(4) + 2$$

- 15 Write an equation for the locus of all points in the coordinate plane that are 5 units from
- $(3, 4)$
- .

$$(x-3)^2 + (y-4)^2 = 25$$

- 16 Graph a circle with a diameter of 4 units that is tangent to the line
- $y = 2$
- .



Name: \_\_\_\_\_

ID: A

- 17 A hospital trauma center is going to be built equidistant from three cities. Positioned on a grid, the cities would be located at  $(3, -2)$ ,  $(-2, 3)$ , and  $(-6, -5)$ . What are the coordinates of the location where the trauma center should be built?

Use sketchpad.

$(-2, -2)$

